

Freeman's Crossing Bridge (Middle Yuba River)
Spanning the Middle Fork of the Yuba River
on California State Highway 49
North San Juan vicinity
Nevada County
Yuba County
California

HAER No. CA-131

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PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Engineering Record
Western Regional Office
National Park Service
U.S. Department of the Interior
San Francisco, California 94102

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HISTORIC AMERICAN ENGINEERING RECORD

Freeman's Crossing Bridge

(Middle Yuba Bridge)

HAER No. CA-131

Location: Spanning the Middle Fork of the Yuba River on State Highway 49, just north of North San Juan, Yuba and Nevada counties, California

UTM: 10.665058.4361785
Quad: Camptonville, California

Date of Construction: 1920-1921

Present Owner: California Department of Transportation
1120 N Street
Sacramento, California 95814

Present Use: Highway Bridge -- Scheduled for demolition in 1993

Significance: Freeman's Crossing Bridge, also known as the Middle Yuba Bridge and determined eligible for the National Register of Historic Places in 1986, is an excellent example of a reinforced concrete open-spandrel arch bridge built using poured-in-place concrete construction. It is also significant for its contribution to the modern development of a transportation link--a statewide effort to link California county seats.

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Date: November 1992

PART I. DESCRIPTION

Freeman's Crossing, or Middle Yuba Bridge (hereinafter referred to as Freeman's Crossing Bridge) crosses the Middle Fork of the Yuba River (also called the Middle Yuba River) in a steep canyon, just north of North San Juan California, on the border between Nevada County on the south and Yuba County on the north. The reinforced concrete, open spandrel, fixed arch bridge is 202 feet long and 21.4 feet wide. The bridge is asymmetrical about the arched main span with four approach spans on the southeast end and three on the northwest end. The main span is a fixed, partial parabolic, two-ribbed arch 132 feet long. It carries a two-lane, cantilevered roadway bounded by reinforced concrete beam railing.

PART II. HISTORICAL INFORMATION

The present Freeman's Crossing Bridge is the sixth bridge to span the Middle Fork of the Yuba River at this location. It was built, in 1920-1921, as a component of the improvement of the present State Route 49 (previously State Route 25), called for in the State Highway Acts of 1909, 1915, and 1919. The open-spandrel arch bridge was designed by the State Highway Commission, at that time the agency responsible for road construction, and built by day laborers. The cost of the project was \$26,638.00, with Yuba and Nevada Counties each paying half. Construction began in July 1920, and the bridge was open to travel on March 23, 1921.

On February 17, 1851 the Court of Sessions of Yuba County granted a license "to build and collect tolls upon a bridge across the Middle Yuba at Nye's [Ferry] Crossing¹ to Matthew Sparks, who had been operating a ferry at the location. The bridge was built and operated by Thomas Hess, but was destroyed by a flood that same winter. Hess re-built the next year, and in 1854 sold the bridge to Thomas Freeman. Freeman constructed a new, more substantial bridge in 1855, but it, too, was destroyed by a flood in 1861. Deciding to shift the location of the bridge a short distance, Freeman began re-building, but before the new bridge was completed, another flood, in January 1862, washed away the framework.² He rebuilt once again, and that bridge appears to have survived until the English Dam broke, on June 18, 1883, and the resulting flood swept it away.

¹Harry L. Wells *History of Nevada County, California*. facsimile edition, Berkeley (Calif.): Howell-North Books, 1970. (Originally published in Oakland, 1880.)

²Wells, 1880, and in William H. Chamberlain and Harry L. Wells, *History of Yuba County, California*, Oakland (Calif.): Thompson and West, 1879. P. 100.

The event of the dam break, blamed on sabotage, was one of the issues involved in the case from which the landmark Sawyers Decision resulted. The decision ended hydraulic mining in California and forever changed the area's economy.³ Transcripts of the trial indicate that the 240 foot long, four span bridge which rested on piers fifteen feet above the water, was completely ripped from its earth and timber abutments by over twenty feet of water and debris. Only a couple of posts were left.⁴ Once again, Freeman rebuilt. According to maintenance reports, this was a two-span, combination truss bridge, built of 160 foot long timber trusses with top chords and inclined end posts of 10 inch by 12 inch timbers. The top chords were 24 feet above the deck.

Thomas Freeman died in 1892 apparently still operating the toll bridge as well as a broom manufacturing business. Theodore Wayman appears to have purchased the bridge from Freeman's estate.

In 1910, in response to a citizens' petition, the toll bridge was jointly purchased from Wayman, by Nevada and Yuba counties, and made into a free bridge.⁵ Nevada County had periodical inspections performed to monitor the condition of the bridge and recommend maintenance. A report from 1915 remarked on the construction of the bridge and its ability to continue to bear the increasing heavy loads to which it was subjected.

The [timbers described above] are light timbers for this span truss and for the duty that the heavy freighting over that road puts upon the bridge. These members have proven fully equal to the past strains which have been put upon the bridge, and which have resulted from loads of six to possible [sic] eight tons maximum. It will be inadvisable to subject these trusses to heavier loads than these.⁶

Presumably, this report contributed to the decision of the County Boards of Supervisors to replace the bridge. Another factor so contributing was the State Highway Acts of 1909, 1915, and 1919. The 1909 law called for the acquisition and construction of a system of State Highways to be funded by bonds. The routes were:

³Marilyn Ziebarth, "California's First Environmental Battle," *California History*, (Fall 1984). Pp. 275-279.

⁴Superior Court Proceedings, "Edward Woodruff vs. North Bloomfield Gravel Mining Company, et al." Vol. 24, Pp. 9996-9997, 10012

⁵"May Buy Bridge on Middle Yuba," *Marysville Daily Appeal*, (Feb. 16, 1910), : 8. "Would Buy Toll Bridge," *Marysville Daily Appeal*, (Dec. 7, 1910): 1.

⁶Fred M. Miller, County Surveyor, to Board of Supervisors of Nevada County. Jan. 6, 1915.

...to constitute a continuous and connected State Highway system running north and south through the State, traversing the Sacramento and San Joaquin Valleys and along the Pacific Coast, by the most direct and practicable routes, connecting the county seats of the several counties through which it passes and joining the centers of population, together with such branch roads as may be necessary to connect therewith the several county seats lying east and west of such State Highways.⁷

The highway on which Freeman's Crossing Bridge is located was designated the Downieville lateral and numbered State Route 25. The Act of 1915 added to the bonded debt, designated amounts for the construction of uncompleted sections and the construction and acquisition of specified extensions. It also stipulated that part of the "...expenses of the acquisition, construction and improvement of the extensions enumerated.." be borne by the counties involved.⁸ The 1919 Act extended the funds from the first two acts and specified additional routes. The Highway Commission had, in 1912, adopted a policy of requiring the counties to assume responsibility for building the bridges, on the state highways, that were over twenty feet long. Oversight for these projects was placed with various divisions of the Highway Commission.⁹

In February 1920, the Nevada County Board of Supervisors, taking responsibility for building their own bridges, passed a resolution authorizing the State Highway Commission to submit for approval plans and specifications for new bridges at Freeman's Crossing and at Jones Bar--the latter being about ten miles south on the same highway.¹⁰ As the Middle Yuba River forms the boundary between Nevada and Yuba Counties, the cost of Freeman's Crossing Bridge was to be split between those two jurisdictions.

The plans, dated March 15, 1920, were drawn by Assistant Highway Engineer, H. E. Jarrington under the direction of Highway Engineer, A. B. Fletcher. Nothing is known of Jarrington. Austin Bradstreet Fletcher, however, was California's first State Highway Engineer and its first Director of Public Works.¹¹ (While Harlan D. Miller is generally credited with introducing a high level of aesthetics to concrete bridge design in California in the mid-

⁷Report on California State Highways, Automobile Club of Southern California and California State Automobile Association, 1920. Pp. 11-12.

⁸Report on California State Highways. Pp. 11-12.

⁹Harlan D. Miller, "Bridge Problems Serious," *California Highways and Public Works*, (April 1924). P. 3.

¹⁰"Two Highway Bridges to be Built Shortly," *Grass Valley Morning Union*, (Feb. 4, 1920). P. 5.

¹¹Fletcher's biography follows the history of the bridge.

nineteen twenties, A. B. Fletcher clearly took the same approach during his years supervising bridge design (1911-1923.)

T. A. Bedford, Highway Commission Division II Engineer, mailed the plans and specifications on May 7th. The cost estimate was \$27,000.00.¹² The plans were approved at the June meeting, and construction scheduled to begin later that month.

While preparations for the construction may have begun on schedule, it was on July 23rd that the Grass Valley Morning Union reported on the delivery of one thousand sacks of cement, stating that the "actual work of construction [would] be underway soon."¹³ In August, because the Highway Commission was short of funds, the counties advanced their shares, totaling exactly \$26,638.00, with the guarantee that any overage would be the responsibility of the Commission.¹⁴ By October 1st, the work was reported as "well-advanced" with crew of twenty-five to thirty men on the job "all free except four or five."¹⁵ The last comment apparently means that the day-laborers were convicts. The improvement that was being done on this highway at the same time was, in fact, being done by convicts, but none of the articles on the bridge actually referred to those laborers as such. To keep the cost down, "a large amount of special machinery" was brought to the site. Into this beautiful, but difficult, spot they hauled, among other things, a planer to prepare the forms, a concrete mixer, and a power hoist.¹⁶ The lumber was cut and the gravel was quarried from the vicinity of the bridge. The other materials, such as steel, were hauled from Nevada City. Time was also a consideration. The newspaper repeatedly reported that the Highway Commission expected the bridge to be completed by December. The late winter and early spring brought heavy rains and high water. It was important to get, at least, the part of the job that would be affected by high water completed before the rains came.¹⁷

¹²T. A. Bedford, Division II Engineer, Department of Engineering, California Highway Commission, to Nevada County Board of Supervisors. May 7, 1920.

¹³"Cement Arrives Here for Highway Bridge," Grass Valley Morning Union, (July 23, 1920): 5.

¹⁴C. C. Carlton, Acting Secretary, California Highway Commission, to Nevada County Board of Supervisors. Aug. 20, 1920.

¹⁵"Work Rushed on Bridge at Middle Yuba," Grass Valley Morning Union (Oct. 1, 1920): 6.

¹⁶"Work Rushed on Bridge at Middle Yuba," Grass Valley Morning Union (Oct. 1, 1920): 6.

¹⁷"Work Rushed on Bridge at Middle Yuba," Grass Valley Morning Union (Oct. 1, 1920): 6.

The approaches and abutments were poured early in October.¹⁸ The Highway Commission engineer (presumably Fletcher) required that concrete pillars be poured to support the forms for the arches. This apparently had to do with the weight of the concrete; the bridge was projected to weigh four tons per running foot, nine hundred tons in all. The pillars proved to be a slight problem because there was no soil foundation. They were to be removed when the forms were dismantled.¹⁹ On October 24, *The Morning Union* reported that the falsework was all in place and the concrete for the arches was being poured.²⁰ Early in November, the Board of Supervisors inspected the job and were "well pleased" with the work and with the progress. Completion by Christmas was predicted. As the old bridge had, by this time, been rendered impassable, a temporary bridge had been built near the water to carry traffic during construction. The Board of Supervisors inauspiciously said that the temporary bridge was safe, but would be put out of service by high water, which, they added, seldom came until spring. They also promised the new bridge would be open to traffic ten days after completion.²¹ But the high water came early. A storm during the first week of December caused work to be stopped for over a week. The hoist had to be abandoned; the motor and concrete mixer were rescued with difficulty. The completion date was adjusted to after the start of the new year.²²

It was not until March, however, that the newspaper announced the completion of construction on the bridge. The approaches still needed grading, but the opening was imminent.²³ Then, on March 23, 1921 they announced that the bridge was open. The paper had great praise for new bridge, calling it a masterpiece of design and workmanship. "The handsome structure," it said, "shows great design skill and perfect workmanship...all lines and surfaces being regular and even...the bridge will rank among the finest in this section of the state." The paper further commended the highway officials for an "excellent job completed under trying circumstances."²⁴

¹⁸"Steel Work on Yuba Bridge to Commence Soon," *Grass Valley Morning Union* (Oct. 3, 1920): 1.

¹⁹"Work Rushed on Bridge at Middle Yuba," *Grass Valley Morning Union* (Oct. 1, 1920): 6.

²⁰"Convict Camp Will Shift to Snake Bar Soon," *Grass Valley Morning Union*, (Oct. 24, 1920): 4.

²¹"Freeman's Crossing Concrete Work Given Approval," *Grass Valley Morning Union*, (No. 7, 1920): 1.

²²"Storms Delay Work on Concrete Bridge," *Grass Valley Morning Union*, (Dec. 9, 1920): 1.

²³"Freeman's Crossing Bridge Soon to be Opened to Traffic," *Grass Valley Morning Union*, (Mar. 9, 1921): 3.

²⁴"Middle Yuba Bridge Open to Traffic," *Grass Valley Morning Union*, (Mar. 23, 1921): 4.

Austin Bradstreet Fletcher

Born in 1872, A. B. Fletcher graduated from Harvard in 1893 with a degree in Civil Engineering and was immediately hired as secretary and executive officer of the Highway Commission of Massachusetts. He remained in that office until 1910 when he assumed the post of secretary-engineer of the San Diego County Highway Commission. One year later, Governor Hiram W. Johnson selected him to head California's first State Highway Department. In this position, he established the principles and ideals that guided the department's road-building efforts for much of its early history. He oversaw the construction of highways under an \$18,000,000 bond issue to connect the important centers of population with each other and with lateral roads to county seats not previously served by main roads. This was the effort under which Highway 49 (then 25) was improved, leading to the construction of the present Freeman's Crossing Bridge.²⁵ When the Department of Public Works was established, Fletcher also became its first head, giving him the distinction of being California's first State Highway Engineer as well as its first Director of Public Works. In 1923, he left California for Washington, D.C. where he served as Consulting Engineer for the United States Bureau of Public Roads. He held that post until his death in 1928.²⁶

Freeman's Crossing Bridge was determined eligible for the National Register of Historic Places in 1987 as part of the California Department of Transportation's historic bridge inventory. The bridge possesses high integrity of location, design, setting, materials, workmanship, feeling and association. It represents a reinforced-concrete, open-spandrel arch type and a poured-in-place concrete method of construction. As part of the improvement of Highway 49 (then Highway 25), it contributed to the development of a major transportation route in a statewide effort to connect important population centers and county seats. The bridge is scheduled for demolition and replacement in 1993.

PART III. SOURCES OF INFORMATION

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²⁵Press Reference library, Western Edition, Vol. II, New York: International News Service, 1915; *Public Roads*, (June 1918), p. 33.

²⁶California Highways and Public Works, (April 1928), p. 2. Obit.

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